

**2 A T 00219****4_A_T_13668**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/931,341	08/31/2004	Kie Y. Ahn	1303.082US2	2266

21186 7590 03/08/2007
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER
WOJCIECHOWICZ, EDWARD JOSEPH

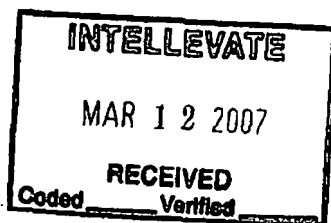
ART UNIT PAPER NUMBER

2815

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.



Schwegman Lundberg
Woessner & Kluth P.A.

MAR 12 2007

RECEIVED



Office Action Summary	Application No. 10/931,341	Applicant(s) AHN ET AL.	
	Examiner Edward Wojciechowicz	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12-18-06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation in each of the independent claims that the structure is arranged as a layered structure "of one or more monolayers" fails to specifically define and limit the inventive structure. Clearly, a structure comprised of a single monolayer is substantially different from one comprised of plural monolayers in that, once a plurality of layers are deposited to form a thicker combined layer of Zr-Sn-Ti-O, the limitation that the layers were initially deposited as "monolayers" loses its structural significance. Therefore, the invention is not clearly defined with respect to the intended limitation regarding monolayers or as to the specific thickness of the claimed Zr-Sn-Ti-O layer. While a recitation of a single monolayer is structurally significant, the alternative form that the claims take renders the final device structure unclear and undefined since a plurality of monolayers cannot actually be identified structurally.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-42 are further rejected, insofar as understood, under 35 U.S.C. 103(a) as being unpatentable over Schneemeyer in view of Watanabe and Nagae, all of record. To the extent that the claims, which recite two structurally different alternatives, can be understood, it appears that the Zr-Sn-Ti-

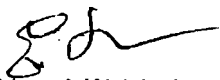
Art Unit: 2815

O layer taught by the cited references would meet the claimed alternative where more than a single monolayer of Zr-Sn-Ti-O is formed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Wojciechowicz whose telephone number is 571-272-1739. The examiner can normally be reached on Monday through Thursday.

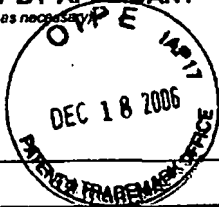
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Edward Wojciechowicz
Primary Examiner
Art Unit 2815

EW: ew

Substitute for form 1449A/PTO
**INFORMATION DISCLOSURE
 STATEMENT BY APPLICANT**
 (Use as many sheets as necessary)



Sheet 1 of 2

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it contains a valid OMB control number.

Complete if Known

Application Number	10/931,341
Filing Date	August 31, 2004
First Named Inventor	Ahn, Kie
Group Art Unit	2815
Examiner Name	Wojciechowicz, Edward

Attorney Docket No: 1303.082US2

US PATENT DOCUMENTS

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Filing Date if Appropriate
EX	US-20040198069A1	10/07/2004	Metzner, C., et al.	04/04/2003
	US-20050145959A1	07/07/2005	Forbes, Leonard	03/08/2005
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	US-7,084,078	08/01/2006	Ahn, K. Y., et al.	08/29/2002
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EX	US-7,135,421	11/14/2006	Ahn, K. Y., et al.	06/05/2002

FOREIGN PATENT DOCUMENTS

Examiner Initials *	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	T ¹
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OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ¹
EX		AHN, "ATOMIC LAYER DEPOSITED DIELECTRIC LAYERS", US Patent Application Serial No. 10/379,470, filed March 4, 2003	

EXAMINER

DATE CONSIDERED

3-1-07

Substitute Disclosure Statement Form (PTO-1449)
 * EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 608. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)	Complete if Known	
	Application Number	10/931,341
	Filing Date	August 31, 2004
	First Named Inventor	Ahn, Kie
	Group Art Unit	2815
	Examiner Name	Wojciechowicz, Edward
Sheet 2 of 2	Attorney Docket No: 1303.082US2	

OTHER DOCUMENTS – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
881		AHN, "IRIDIUM / ZIRCONIUM OXIDE STRUCTURE", <u>US Application Serial No 11/152,759, filed June 14, 2005</u>	
		AHN, KIE Y., "LANTHANIDE YTTRIUM ALUMINUM OXIDE DIELECTRIC FILMS", <u>U.S. Application Serial No. 11/297,567, filed December 8, 2005</u>	
		AHN, "LANTHANUM ALUMINUM OXYNITRIDE DIELECTRIC FILMS", <u>US Application Serial No 11/216,474, filed August 31, 2005</u>	
881		AHN, KIE Y., "MAGNESIUM TITANIUM OXIDE FILMS", <u>U.S. Application Serial No. 11/189,075, filed July 25, 2005</u>	

EXAMINER

881

DATE CONSIDERED

3-1-07

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